MONTHLY WEATHER REVIEW

Editor, EDGAR W. WOOLARD

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OCTOBER 1943

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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR OCTOBER 1943

[Climate and Crop Weather Division, J. B. KINCER, in charge]

AEROLOGICAL OBSERVATIONS

NOTICE.—Effective with the December 1942 issue, the publication of table 1 (RAOB summaries) was discontinued indefinitely.—EDITOR.

TABLE 2.—*Free-air resultant winds based on pilot-balloon observations made near 5 p. m. (75th meridian time) during October 1943. Directions given in degrees from North (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second*

Altitude (meters) m. s. l.	Abilene, Tex. (538 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (870 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (132 m.)			Charleston, S. C. (17 m.)			Cincinnati, Ohio (152 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,196 m)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	30	207	1.7	31	239	2.1	30	310	1.3	31	336	2.4	31	202	2.6	29	287	0.7	30	83	2.9	29	301	1.8	30	303	1.4	31	297	0.7	30	316	1.5	31	8	0.8	31	205	1.4
500	---	---	---	---	---	---	30	303	1.7	---	---	---	---	---	---	---	---	---	30	83	3.5	29	311	2.8	30	316	2.0	31	305	1.9	30	318	2.1	---	---	---	---	---	---
1,000	30	217	2.5	---	---	---	29	287	1.8	---	---	---	30	196	2.7	29	256	0.6	28	77	1.3	26	286	2.8	29	280	2.0	30	305	2.8	28	296	3.4	---	---	---	---	---	---
1,500	29	246	2.4	---	---	---	28	297	2.1	31	291	2.2	28	194	3.4	29	198	1.7	27	256	0.9	21	311	3.1	24	228	3.9	29	304	3.8	26	292	5.0	---	---	---	31	215	1.9
2,000	28	270	3.8	31	261	3.5	26	292	3.5	30	264	3.9	26	223	3.8	28	208	2.6	24	329	2.5	18	300	4.9	13	228	6.2	29	292	5.5	22	295	6.6	31	325	1.4	31	224	1.2
2,500	28	280	5.8	31	266	4.0	24	293	4.6	29	269	4.6	26	240	2.9	28	222	4.1	22	332	3.3	17	298	6.3	---	---	---	29	289	6.8	19	295	6.0	31	316	1.1	31	243	2.1
3,000	24	275	6.3	31	278	4.9	23	284	5.7	28	274	5.3	23	262	4.3	26	219	4.8	17	322	4.6	15	312	8.2	---	---	---	28	277	7.4	19	295	6.6	31	293	2.8	31	252	3.5
4,000	21	286	8.7	29	299	5.4	21	280	7.6	25	270	7.0	22	254	6.2	21	211	7.0	15	291	6.8	11	311	7.3	---	---	---	26	274	10.6	15	286	5.8	30	291	5.9	29	273	6.1
5,000	19	279	11.2	24	295	7.4	21	274	10.3	21	258	6.1	22	256	6.3	19	220	8.0	14	284	8.0	---	---	---	---	---	---	25	268	12.9	13	265	5.4	24	301	8.0	25	274	7.9
6,000	19	281	13.2	22	268	8.8	21	280	11.5	21	259	6.4	20	271	6.5	15	242	9.7	13	283	12.4	---	---	---	---	---	---	23	267	13.5	13	269	6.2	21	301	7.7	23	276	9.6
8,000	14	287	19.9	20	290	11.4	13	277	13.7	15	255	7.6	15	268	6.1	---	---	---	10	282	19.0	---	---	---	---	---	---	13	286	16.9	---	---	---	19	303	9.8	19	284	15.0
10,000	---	---	---	15	285	17.7	---	---	---	11	248	7.5	13	331	4.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	16	292	9.8	---	---	---
12,000	---	---	---	11	286	29.0	---	---	---	10	252	10.5	12	310	5.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,413 m.)			Greensboro N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (573 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (410 m.)			Miami, Fla. (15 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	30	220	2.4	30	299	1.3	30	316	0.7	29	292	1.3	30	48	2.1	31	332	1.4	31	200	1.0	31	312	0.3	27	323	0.7	30	71	1.6	30	7	1.1	29	310	1.6	27	281	2.2
500	---	---	---	---	---	---	30	297	1.0	---	---	---	30	18	2.9	31	332	2.8	---	---	---	31	201	0.5	27	322	1.1	30	58	3.0	30	4	1.6	29	317	2.2	27	272	3.6
1,000	---	---	---	---	---	---	30	294	1.9	29	274	2.2	24	300	2.6	31	310	2.8	31	204	1.6	30	231	1.1	27	291	1.2	29	38	1.2	29	358	2.4	26	313	1.6	24	301	5.9
1,500	---	---	---	30	299	1.9	28	290	3.9	29	263	3.1	24	302	3.2	30	293	4.6	30	200	2.7	30	252	3.1	27	223	2.0	27	269	1.6	28	359	2.1	26	301	2.4	24	301	6.9
2,000	30	207	2.7	30	289	3.1	26	308	6.8	28	256	4.1	25	280	4.1	26	295	5.8	30	216	2.8	28	270	4.0	24	199	2.8	20	257	2.4	28	322	2.7	25	294	3.8	22	302	8.9
2,500	30	216	3.2	30	256	3.3	26	301	6.6	26	248	4.8	25	273	5.7	23	297	6.5	30	226	3.9	24	268	7.0	20	186	3.4	18	250	2.4	25	290	2.0	25	289	4.8	18	303	9.9
3,000	30	227	4.0	30	253	3.8	26	290	9.0	26	248	6.4	25	270	6.6	23	297	7.8	29	250	4.3	22	277	8.6	19	197	3.1	14	253	3.5	22	294	2.8	24	285	5.7	12	297	8.6
4,000	26	255	5.2	25	265	3.4	24	289	10.1	23	243	7.6	22	262	9.3	19	305	9.3	29	262	6.2	20	285	10.2	16	247	3.5	12	242	4.2	21	276	5.0	21	279	7.8	---	---	---
5,000	20	254	6.7	23	287	5.0	21	279	11.4	18	235	7.4	21	258	11.9	15	304	7.6	24	277	9.3	19	283	11.3	11	259	5.6	11	261	4.1	17	274	7.9	18	286	10.9	---	---	---
6,000	20	265	8.2	21	280	7.3	19	282	14.4	15	249	6.6	18	270	13.8	10	299	4.7	23	269	12.1	17	287	12.9	10	281	5.2	---	---	---	16	282	9.8	18	287	12.8	---	---	---
8,000	15	274	10.5	---	---	---	14	266	15.5	11	237	6.4	13	278	17.4	---	---	---	20	292	13.4	12	282	17.0	---	---	---	---	---	---	11	268	15.8	12	288	15.3	---	---	---
10,000	---	---	---	---	---	---	11	256	19.1	---	---	---	11	282	20.1	---	---	---	17	289	21.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	13	283	16.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (396 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz (388 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (15 m.)			Sault Ste. Marie, Mich. (230 m.)			Seattle, Wash. (12 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	248	4.3	31	204	1.3	30	141	0.5	31	158	1.3	30	311	0.7	30	326	1.5	30	238	0.8	31	92	1.0	31	275	3.5	28	300	1.6	29	207	1.5	29	141	0.6	28	286	1.2
500	31	274	2.0	31	213	1.5	30	70	0.7	31	151	1.5	---	---	---	30	330	1.8	30	233	0.6	31	110	1.3	31	286	3.2	28	321	1.3	29	206	3.0	---	---	---	28	288	2.8
1,000	28	248	1.1	30	223	2.6	29	212	0.5	31	146	1.9	30	310	0.7	29	282	1.6	28	280	1.2	30	125	1.3	29	266	1.5	26	306	1.7	26	197	5.1	29	204	2.0	27	283	4.8
1,500	27	249	2.0	29	247	3.6	28	240	1.1	31	159	2.1	30	279	2.2	27	273	2.1	26	292	2.3	28	198	0.4	28	211	1.0	24	306	2.4	23	193	5.9	26	216	3.2	24	286	7.0
2,000	25	231	3.6	27	269	5.4	27	269	2.1	31	178	1.7	30	288	3.1	21	260	4.0	22	295	4.2	27	291	1.8	26	212	1.0	22	306	3.8	18	197	6.7	24	219	5.1	20	285	8.0
2,500	24	229	4.2	27	273	7.3	25	281	2.7	31	210	2.3	29	284	4.1	20	265	5.8	22	319	5.4	27	293	3.3	26	230	1.8	21	323	4.2	14	197	4.7	18	226	4.7	15	303	8.8
3,000	24	244	4.9	27	278	7.6	25	296	3.2	31	215	2.4	28	284	5.9	19	275	6.6	22	320	6.0	25	283	4.7	26	224	2.4	20	333	5.9	---	---	---	17	235	5.2	13	307	7.4
4,000	24	262	7.4	25	289	9.6	22	317	3.6	28	235	3.8	24	270	6.5	17	277	8.0	22	328	7.2	22	292	6.5	21	248	4.3	15	356	7.0	---	---	---	15	228	6.8	10	300	8.3
5,000	23	264	10.3	23	291	11.3	20	318	6.8	28	235	6.8	23	268	5.7	15	275	10.6	22	327	7.0	22	285	9.3	18	271	5.9	13	349	6.7	---	---	---	13	246	6.3	---	---	---
6,000	23	275	12.6	23	291	12.2	19	319	5.9	28	277	9.4	22	270	7.0	13	285	12.6	21	314	7.9	22	284	11.6	15	265	6.2	---	---	---	---	---	---	11	264	8.1	---	---	---
8,000	18	285	13.4	14	304	17.1	11	1	6.4	24	282	14.9	19	279	8.5	---	---	---	17	337	7.8	17	290	18.6	13	272	8.9	---	---	---	---	---	---	10	248	11.2	---	---	---
10,000	12	283	17.2	---	---	---	---	---	---	16	280	15.5	13	279	6.9	---	---	---	14	355	5.8	13	281	23.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12,000	11	273	15.2	---	---	---	---	---	---	---	---	---	10	350	3.3	---	---	---	13	306	10.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10	299	12.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 3.—*Maximum free-air wind velocities (m. p. s.), for different sections of the United States, based on pilot-balloon observations during October 1943*

Section	Surface to 2,500 meters (m. s. l.)					Between 2,500 and 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station
Northeast [1]	46.9	w.	1,020	29	Portland, Maine	43.8	wnw.	5,000	7	Caribou, Maine	71.2	sw.	11,200	3	Mt. Washington, N. H.
East-Central [2]	33.9	nw.	2,160	19	Greensboro, N. C.	38.3	nw.	4,150	20	Washington, D. C.	60.8	wsw.	11,010	4	Raleigh, N. C.
Southeast [3]	27.6	w.	2,320	16	Mobile, Ala.	38.1	w.	4,960	31	Charleston, S. C.	48.3	w.	14,640	21	Mobile, Ala.
North-Central [4]	33.4	s.	1,720	13	Alpena, Mich.	43.2	w.	4,790	29	Muskegon, Mich.	59.8	wnw.	16,330	27	International Falls, Minn.
Central [5]	38.8	ne.	1,650	11	Des Moines, Iowa	43.1	nw.	4,840	15	Wichita, Kans.	58.4	wsw.	9,440	31	Wichita, Kans.
South-Central [6]	40.0	wsw.	2,430	30	Abilene, Tex.	43.6	wnw.	4,220	15	Little Rock, Ark.	62.5	nw.	14,190	25	Big Spring, Tex.
Northwest [7]	54.6	s.	1,210	24	Tatoosh Island, Wash.	48.0	sw.	4,780	24	Burns, Oreg.	78.8	wsw.	12,990	26	Billings, Mont.
West-Central [8]	43.0	sse.	2,500	26	Sacramento, Calif.	49.2	sse.	2,620	26	Sacramento, Calif.	67.0	sw.	9,220	17	Redding, Calif.
Southwest [9]	43.2	ssw.	1,900	18	Winslow, Ariz.	44.0	nnw.	4,840	11	Las Vegas, Nev.	60.0	w.	11,050	22	Phoenix, Ariz.
						44.0	s.	4,530	26	Sandberg, Calif.					

[1] Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.
[2] Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennssee, and North Carolina.
[3] South Carolina, Georgia, Florida, and Alabama.
[4] Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
[5] Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.
[6] Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.
[7] Montana, Idaho, Washington, and Oregon.
[8] Wyoming, Colorado, Utah, northern Nevada and northern California.
[9] Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVER STAGES AND FLOODS

By C. R. JORDAN

Precipitation during October as compared with normal was variable over the entire country. Amounts were well above normal over the northeastern section and extending as far south as Maryland and northeastern Virginia. The Ozark region, the North Central Plains, and the far Northwest also received above normal precipitation. Amounts were very scanty in sections of the Southwest and also the Southeast.

Unusually low river stages continued during October in most of the southern two-thirds of the country, especially in the southeastern section.

October was the second consecutive month with no floods of consequence reported in the United States. There were two periods of rather heavy rainfall over the Northeast during the month but the initial river stages were low and the soil was in most cases unusually dry with the result that bankful stages were reached only in a few headwater streams.

Atlantic Slope drainage.—Heavy rains, resulting in amounts of from 2 to 5 inches over much of the area, occurred in the northeastern section of the country from October 16–19. Flash floods resulted in some sections of Maine, especially in the Little River at Belfast, Maine, which carried away the dam providing the municipal water supply, a 200-foot steel bridge, and four smaller bridges, as well as causing some damage to streets and cellars in the vicinity. The Sandy River near Farmington overflowed its banks and caused some damage to roads and cellars. Slight damage also resulted in the Androscoggin Valley. No estimate of the damage sustained has been compiled.

Rainfall of from 2 to 3 inches occurred again over the Northeast from October 26–28, and produced moderate rises in most of the streams. The Susquehanna River exceeded flood stage slightly at Oneonta, N. Y., on the 27th and the Tioughnioga River at Whitney Point, N. Y., reached a stage a little in excess of the established flood stage on the 29th. No damage resulted.

Mississippi Basin.—The Mississippi River just reached flood stage (12 feet) at Louisiana, Mo., on October 3 and 4. This stage resulted from the manipulation of Dam No. 24 and no damage occurred.

FLOOD-STAGE REPORT FOR OCTOBER 1943

[All dates in October]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	*Feet*			*Feet*	
Tioughnioga: Whitney Point, N. Y.	12	29	29	12.6	29
Susquehanna: Oneonta, N. Y.	12	27	27	12.1	27
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Mississippi: Louisiana, Mo.	12	3	4	12.0	3–4